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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,622	11/09/2001	Giacomo Stefano Roba	05788.0189	5933
22852	7590	04/06/2006	EXAMINER	
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			HOFFMANN, JOHN M	
			ART UNIT	PAPER NUMBER
			1731	

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/986,622	Applicant(s) ROBA ET AL.	
	Examiner John Hoffmann	Art Unit 1731	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 31-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 31-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7 February 2006 has been entered.

### ***Response to Amendment***

The amendment filed 2/7/2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The change on page 5 of "at least" to "about".

Applicant is required to cancel the new matter in the reply to this Office Action.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 31-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "furnace" and/or "drawing furnace" are indefinite as to their meaning. On page 18 of the 2/7/2006 response, the last full paragraph indicates that the Harding furnace does not comprise the holding chuck. Examiner is not aware of any conventional definition of "furnace" which excludes a chuck or any other structure. It is deemed that one of ordinary skill would not be able to ascertain whether any given furnace-like apparatus is or is not a "furnace", because the mere inclusion of other structure (such as a chuck) would not read on the claims. In other words, a potential infringer would not be able to ascertain whether one could copy applicant's invention, but merely add extra structure (like a chuck) to avoid infringement.

See also, Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375, 60 USPQ2d 1272, 1276 (Fed. Cir. 2001) (citation omitted) (patent claims must be "sufficiently precise to permit a potential competitor to determine whether or not he is infringing").

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 31-39 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson 2002/0029591 (or Harvey 5284499) in view of Kazuya JP 08091862 (as per Applicant's translation thereof), Strackenbrock 5160359, and Bair 4547644 and optionally in view of Harding 4988374.

Dickinson (at figure 1) and Harvey (at figure 2, col. 4, lines 60-68 and col. 5, lines 4-10) disclose the drawing furnace with furnace body, susceptor, coil, insulator, a muffle terminating at the upper end of the furnace body, mechanical seal (the before the preform is moved limitation is an intended use limitation that does not define over the references), a bottom portion and a distributor body. However the bottom portions and distributor bodies of Dickinson and Harvey are not of the specific type require by the claims.

Kazuya teaches that using the tapered shape structure (that appears to be the same or nearly the same as Applicant's bottom chimney) decreases fluctuations in the outer diameter of the preform. It would have been obvious to use the Kazuya teaching to improve the Dickinson or Harvey apparatus, for the advantages that Kazuya teaches. See previous rejections.

Bair is cited to reinforce Kazuya – See col. 7, lines 4-6 which teaches that a conical shaped extension also will reduce air drafts.

As to the distributor body, since Dickinson's muffle is below the distributor 38, the has has to be forced in a downward direction: it is inherent that a gas con only get to a lower location by moving in a downward direction.

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Harvey does not explicitly show the downward introduction, but based on col. 5, lines 5-10 " would reasonably infer that the disclosure is directed to the a device on top of the muffle, such as shown in Dickinson, Bair and other references of record so that the air is moving in a downward direction as it enters the muffle.

From MPEP 2144.01 Implicit Disclosure:

"[I]n considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

See also, *In re Fritch*, 972 F.2d 1260, 1264-65, 23 USPQ2d 1780, 1782-83 (Fed. Cir. 1992); *In re Sovish*, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir 1985).

As to the air being introduced tangentially, Strackenbrock shows it is known to introduce gas tangentially during a fiber draw process so as to reduce the quantity of gas (col. 1, lines 45-50) and prevents mechanical effects of the gas stream (col. 1, lines 60-62) as well as boundary (insulating) layers (col. 4, lines 2-4). It is also disclosed not to direct the gas directly at the fiber (col. 3, lines 55-65 and col. 1, line 13-29). The chamber is shown as "substantially annular" because the upper part of chamber 17 is annular.

Since Dickinson is concerned with reacting the gas with impurities, one would have been motivated to provide the gas tangentially, so as to prevent the build-up of insulating/boundary layers, and reduce the quantity of gas. More specifically, as per [0021] and elsewhere, Dickinson advocates promoting reactions. Strackenbrock teaches that one can prevent insulating layers on the preform: clearly any insulating

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layers would inhibit the reaction that Dickinson advocates. Alternatively, it would have been obvious to provide the air tangentially for any of the other reasons that Strackenbrock gives (this also applies to Harvey's invention which does not disclose any reaction.

Harding can be applied as in prior Office actions: Harding teaches downward introduction to clean the preforms – it would have been obvious to apply this to the primary references for that reason.

Claim 32: it is deemed that some of the gas would move substantially perpendicularly downward. However, such is an intended use limitation that one could utilize, depending upon what gas pressures are use used. Alternatively, it would have been obvious to perform routine experimentation to determine the optimal angle for Harding's modification – this applies in particular to claim 33.

Claim 34: requires the use of the Harding reference because claim 34 requires a downward-angled outlet. Besides that, Claim 34 is substantially the same as claim 31.

Claim 35 is clearly met.

Claim 36: Applicant has not properly traversed the Official Notice taken that it is well known to use fins to distribute gases and to provide adjustability. All that is needed to adjust gas flow is a surface: fins (thin, plate-like structure) have a very high surface:volume ratio – there is no need to use a heavy, thick surface to deflect gas when a thin device will do the same job. Since the Official Notice was not adequately traversed, such is now deemed to be admitted prior art.

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From **MPEP 2144.03**

To adequately traverse such a finding, an applicant must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art. See 37 CFR 1.111(b).

Since there is no indication of any supposed error specifically pointed out nor any attempt to show that the fact is not common knowledge or well-known in the art.

It would have been obvious to alter the Dickinson or Harvey apparatus to provided finned structure rather than holes so that one can selectively control gas flow at various points.

Claim 37: Examiner taken Official notice that it is well known to use a porous material to help evenly distribute air pressure. Since Applicant has not adequately traversed the finding, such is now deemed to be admitted prior art. It would have been obvious to use a porous media within the distributor instead of (or in addition to) the gas feeding, for the same known advantage of distributing the uniformly to all ports.

Claims 38 – it is deemed that feature 7 of Harding is a support collar as claimed. It would have been obvious to use such to hold the preform, so that it moves only as it is suppose to move.

Claim 39: it is deemed that it can slide as claimed, when it is not connected to any other structure. Sliding is a method step that does not (seem to) import any structure into the claims. It is noted it would have been obvious to have the chuck 7 be removable (from anything that it might be attached to) so that one can interchange/repair as one sees fit. Making things separable is generally not a patentable invention.



Claim 50: it would have been obvious to make the susceptor as large as desired- depending upon how large a preform one was using.

Claims 31-39 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson 2002/0029591 (or Harvey 5284499) in view of Kazuya JP 08091862 (as per Applicant's translation thereof), Bair 4547644, and Miller 4678490 and optionally in view of Harding.

The first 4 references are applied as above. Miller is applied as in the prior Office action. Specifically: tangential feeding is conventional in the glass fiber making art as is shown in Miller. It is well known in the glass fiber art to provide gases tangentially when supplying gas to an annular manifold – and that such can make the flow velocities through the ports more uniform and even minimize turbulence (as applicant does). See Miller, col. 1, line 33 to col. 2, line 13, as well as figures 3 and 5a. It would have been obvious to feed the Dickinson and/or Harvey gas tangentially so as to make the flow more uniform around the preform – as taught by Miller.

Claim 36: In addition to the above discussion as to why fins are old and would have been obvious: it is deemed that structures such as 46 and 34 of Miller are vanes that are within the outlet: an outlet is nothingness. One could argue that the outlets of Miller extend all the way to the vanes. Applicant has not defined the outlets in a manner which would exclude such.

The art is applied to the other dependent claims substantially as indicated above.

Claims 38-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson 2002/0029591 (or Harvey 5284499) in view of Kazuya JP 08091862 (as per Applicant's translation thereof), Bair 4547644, and Miller 4678490 and optionally in view of Harding as applied to claim 34, and further in view of Kaiser 4030901.

Kaiser teaches to use a collar to prevent contamination of the fiber. It would have been obvious to use the Kaiser collar so as to prevent contamination of the fiber.

Claim 41 – Applicant indicates that the Enerseals are conventional (page 32, lines 13-14. It would have been obvious to use an Enerseal for their well established properties. As to the height ratio – it would have been obvious to use whatever dimensions for the seal, depending upon which will adequately seal the structure.

Claim 42: it is clear that some angle is better than no angle. Thus the angle is a result-effective variable. It would have been obvious to perform routine experimentation to determine the optimal angle. Claim 42 is interpreted as requiring a single angle that is between 12 degrees and 16 degrees. And not a single angle that includes both 12 degrees and 16 degrees and all angles there between.

Claim 43 would have been obvious depending upon the size of the preform and the final diameter that is drawn.

Claim 44: see feature 16A of Harding.

Claim 45: It is clear that temperature is an important feature – in particular see Harding which shows deposits on the lower wall – and how temperature plays a role in

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that (paragraph spanning cols. 3-4). It would have been obvious to provide a cooling/heating jacket so as to permit one to control as one sees fit.

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson 2002/0029591 (or Harvey 5284499) in view of Kazuya JP 08091862 (as per Applicant's translation thereof), Bair 4547644, and Miller 4678490 and optionally in view of Harding as applied to claim 34, and further in view of Koaizawa 5897682.

(This rejection is an alternative and/or additional rejection of claim 45)

It is well known to supply cooling jackets so as to cool the fiber as quickly as possible so that one can increase the line speed. See Koaizawa. It would have been obvious to add a cooling jacket at the lower end as taught by Koaizawa, so that one can increase the line speed.

Claims 46-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson 2002/0029591 (or Harvey 5284499) in view of Kazuya JP 08091862 (as per Applicant's translation thereof), Bair 4547644, and Miller 4678490 and optionally in view of Harding as applied to claim 31 above, and further in view of Uhm EP 0867412.

As discussed in previous actions, Uhm discloses rigid graphite to be a superior insulation material in the induction furnace art. It would have been obvious to improve the Paek furnace, by using the Uhm insulation material. See how the rest of the claims are met as discussed in the prior Office action.

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson 2002/0029591 (or Harvey 5284499) in view of Kazuya JP 08091862 (as per Applicant's translation thereof), Bair 4547644, and Strackenbrock 5160359 and optionally in view of Harding as applied to claim 34, and further in view of Koaizawa 5897682.

Claims 38-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson 2002/0029591 (or Harvey 5284499) in view of Kazuya JP 08091862 (as per Applicant's translation thereof), Bair 4547644, and Strackenbrock 5160359 and optionally in view of Harding as applied to claim 34, and further in view of Kaiser 4030901.

Claims 46-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson 2002/0029591 (or Harvey 5284499) in view of Kazuya JP 08091862 (as per Applicant's translation thereof), Bair 4547644, and Strackenbrock 5160359 and optionally in view of Harding as applied to claim 31 above, and further in view of Uhm EP 0867412.

These three rejections utilize Koaizawa, Kaiser and Uhm (respectively) in the same manner as the above rejections (the only difference being that Strackbrock is used rather than Miller).

### ***Response to Arguments***

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

As applicant correctly points out, Paek does not have a muffle terminating at the upper end of the furnace body. However such is well known structure in induction furnaces for optical fibers – as shown by Dickinson and Harvey (above). It is noted that Dickinson and Harvey were probably not needed for a rejection: it is generally not invention to provide protective structure (such as a tube) around objects that are to be heated, and which one would desire to keep clean.

### ***Conclusion***

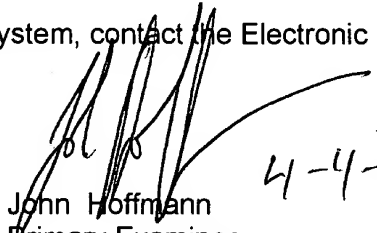
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pei Ching is cited as showing another tapered outlet. Schubert is cited as showing that it is known that the flow/mixing of gases is an important factor for reactions.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272-1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
John Hoffmann  
Primary Examiner  
Art Unit 1731

4-4-06

jmh